

A New Energy Future for Wisconsin



As we begin the last year of the first decade of a new century, it is clear that Wisconsin has built a foundation upon which we are transforming the way we use and produce energy. During the last ten years, Wisconsin has made greater progress toward a new, renewable energy future, than at any time in our history. Wisconsinites have seen a decade of work aimed at making Wisconsin a national clean energy leader, and to turn the \$16 billion in annual fuel costs leaving our state every year into jobs and economic opportunity.

Efforts over the past decade include:

- In April 2008, the Clean Energy Wisconsin plan was launched. It described goals of:
 - generating 25 percent of the state's electricity and 25 percent of Wisconsin's transportation fuels from renewable sources by 2025 (better known as 25 x '25), and
 - capturing 10 percent of the market share for renewable energy.
- Act 89 was enacted on December 3, 2003, creating a new energy office at the Department of Natural Resources, while streamlining and updating the state's regulatory review process for utility development and construction. As a result, more than 3,000 megawatts of new electric generation—a \$5 billion investment—have been built or authorized in Wisconsin since 2003. This includes highly efficient base-load coal additions, natural gas units, and several large-scale renewable facilities
- On March 17, 2006, Act 141 was enacted into law implementing the recommendations of the Energy Conservation and Renewable Energy (ECRE) Task Force recommendations including a renewable portfolios standard (RPS) and a commitment to statewide energy efficiency. The RPS has spurred development in Wisconsin's wind, solar and biomass industries with more than 300 companies and thousands of jobs now in the state's wind industry.
- In September 2006, three energy-saving incentive programs were announced to help working families: the Furnace Bounty to provide rebates to families buying new, energy-efficient furnaces; \$125 rebates for Home Energy Audits; and refunds to families buying energy-efficient light bulbs.
- An independent evaluation shows Wisconsin's clean energy programs through Focus on Energy added more than 5,000 jobs and more than \$1.4 billion to Wisconsin's economy since the program began in 2001.

Energy Efficiency

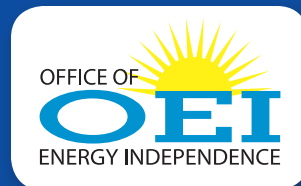


Wisconsin created and nurtured one of the most successful energy efficiency and conservation efforts in the country: the Focus on Energy program. 2005 Wisconsin Act 141, which grew out of Governor Doyle's Task Force on Energy Efficiency and Renewable Energy, secured funding for Focus—a program that saves Wisconsin's citizens, businesses and industries \$268,000,000 each year in energy costs.

Focus on Energy is now deploying Recovery Act funds to Wisconsin citizens purchasing Energy Star appliances. \$5,500,000 in rebates to citizens purchasing qualifying appliances from Wisconsin retailers will be distributed by June 2010.

Energy Independent Communities

Governor Doyle's Energy Independent Communities initiative resulted in more than 100 local governments—all across Wisconsin—pledging to take local action to improve energy efficiency and deploy renewable energy at the local level. Our communities were well positioned to use the \$37 million available to Wisconsin as part of the 2009 American Recovery and Reinvestment Act funding. The Office of Energy Independence has provided nearly \$1,000,000 in financial assistance to local governments for 25 x '25 planning.

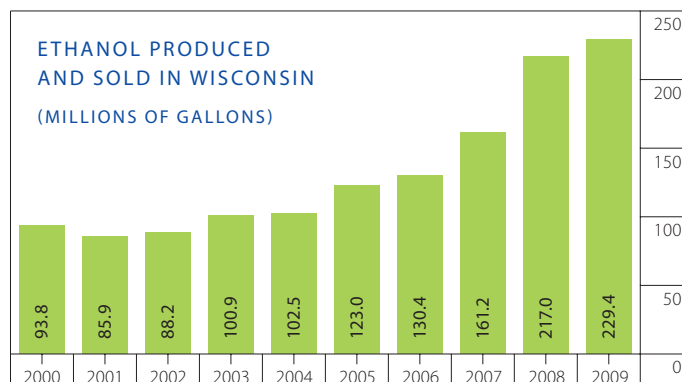


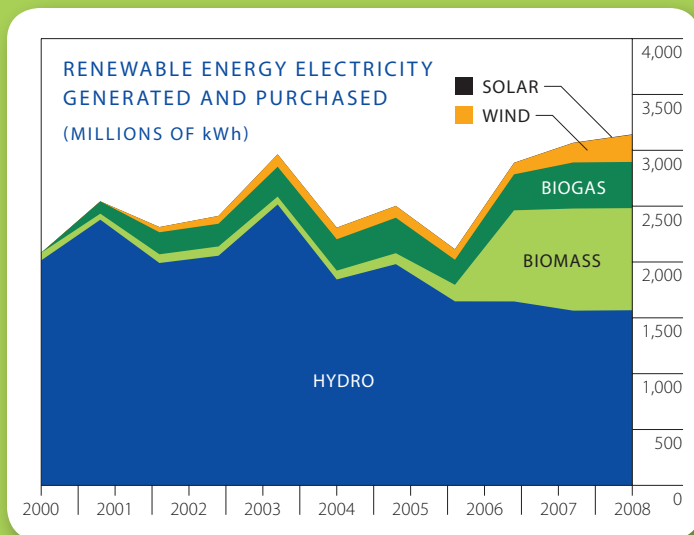
Office of Energy Independence

In April 2007, Governor Doyle issued Executive Order 192 creating the Office of Energy Independence (OEI) to lead the state's effort to advance clean energy. The Governor tasked the Office with helping to move the state toward its goal of sourcing 25 percent of its transportation fuels, and 25 percent of its electric power from renewable sourced by 2025—more popularly known as 25 x '25. OEI is led by Judy Ziewacz, and provides information and assistance to citizens, business and agriculture on renewable energy and energy efficient opportunities.

Biofuels Production

Biofuel production in Wisconsin has soared since 2002. Wisconsin is 9th in the U.S. in ethanol production; renewable fuel now displaces 10 percent of motor gasoline in Wisconsin, reducing dependence on imported oil. Ethanol and other biofuels plants in Wisconsin now directly employ more than 300 people and are a billion dollar industry in the state. Virtually all of this growth has happened in the last seven years.





Renewable Electricity

With the strong support of utilities, business, and environmental organizations, Wisconsin raised its renewable energy requirement for electric utilities in 2005 to 10 percent of sales by 2015. Utilities are ahead of schedule to meet that requirement. Renewable electricity now constitutes about 6.5 percent of our total electricity and is growing steadily.

Hydroelectric, biomass, biogas, wind and solar energy all contribute to reducing our reliance on coal and natural gas imported from other states.

Fuels for Schools

With the strong support of the Focus on Energy Program and the Office of Energy Independence, more and more Wisconsin schools are examining converting from natural gas or fuel oil heating to wood chips or wood pellets. Twelve schools have



converted to biomass energy and many more schools could benefit from locally-produced, low-cost energy.

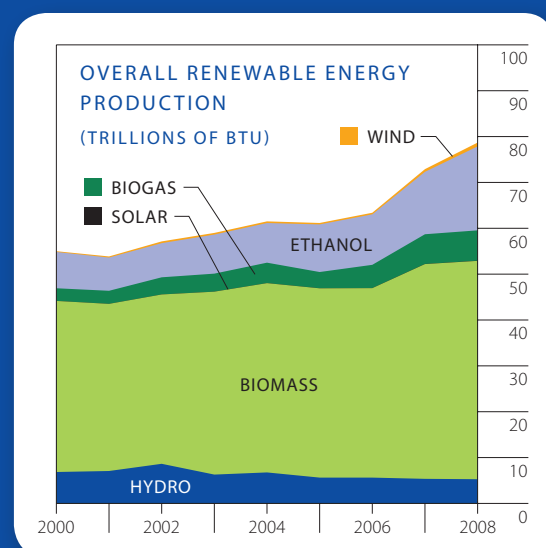
World Class Energy Research

Backed by a strong commitment from Governor Doyle, UW-Madison was selected by the U.S. Department of Energy as one of three major Bioenergy Research Centers in the U.S. The \$134,000,000 funding commitment from the U.S. DOE makes the Great Lakes Bioenergy Research Center one of the premier biofuels research centers in the world.



Total Renewable Energy Use in Wisconsin

Total renewable energy use in Wisconsin has grown rapidly in the last 10 years. Wisconsin has no coal, oil, or natural gas. But our state does have cropland, fields, and forests from which we can develop energy sources, creating jobs in our state. In 2008, Wisconsin spent nearly \$24,000,000,000 on energy and \$16,000,000,000 left the state. By investing in our own energy supplies, Wisconsin will keep more of that \$16 billion—and the jobs that come with it.





GOVERNOR DOYLE ANNOUNCES WISCONSIN'S CLEAN TRANSPORTATION AWARD SURROUNDED BY A HYBRID LADDER TRUCK AND A NEIGHBORHOOD ELECTRIC VEHICLE USED ON THE UW CAMPUS.

Electrification of Transportation

Wisconsin received the largest Alternative-Fueled Vehicle/Clean Cities funding package in the nation during the fall of 2009—one of 30 such awards that were made by the U.S. Department of Energy.

Wisconsin municipal and private fleets will receive \$15,000,000 of support to assist them in purchasing pollution-reducing, energy efficient, alternatively-fueled vehicles. The vehicles will result in 1,600,000 fewer gallons of gasoline consumption and help save local taxpayers money.

21st Century Manufacturing Jobs

In deploying Recovery Act funds from the U.S. Department of Energy, Governor Doyle directed that \$55,000,000 of the State Energy Program money be deployed in Wisconsin's manufacturing sector. These funds are used to capitalize new and grow existing businesses, make new investments in clean energy and create jobs. Solar panel assembly, wind turbine component manufacturing, innovative new insulation businesses and new advanced biofuels companies are examples of how some of the funds are invested.

As the leading manufacturing state in the U.S. (in the percentage of our workforce engaged in manufacturing), Wisconsin is not only rapidly increasing renewable energy, but creating new, family-supporting jobs and business opportunities.



GOVERNOR DOYLE VISITS MARSHFIELD IN JUNE.

New Energy Sources from the Farm

Wisconsin leads the United States in anaerobic digester deployment—our 30 units now in operation represent at least \$30,000,000 in investment. Moreover, food processing digesters are being built in larger numbers than ever. Food processing companies are discovering that Wisconsin is an ideal place to convert their food and processing wastes to energy, protecting our environment and creating new supplies of renewable energy.

Home-Grown Energy Entrepreneurs: the Wisconsin Energy Independence Fund

In 2008, 22 Wisconsin businesses—both large and small—were assisted by competitive awards from the Wisconsin Energy Independence Fund. \$7.5 million dollars was awarded by the State of Wisconsin.

Many of the recipients are on the leading edge of technology in their fields. Companies like Idle Free Systems, Virent Energy, SolRayo, Johnson Controls, ZBB and many others are developing technology that will save or store energy, or produce new sources of renewable energy. This R&D program has been successful in helping companies attract angel and investor capital, so they can expand, benefiting Wisconsin's economy and citizenry.



Innovative Biofuels

DuBay Ingredients, a Wisconsin company, has developed a technology to convert waste water to fuel-grade ethanol. This waste water is special because it contains whey permeate—a byproduct from one of Wisconsin's landmark industries—cheesemaking. The conversion to ethanol reduces or eliminates the need to spread this wastewater on farmland, reducing costs for cheese plants, and producing a low-carbon biofuel.

As Governor Doyle said during his 2010 State of the State address, "You know, in other places, they just eat cheese. But here we wear it on our heads when we watch football and now ... Wisconsin is the state where we can even use it to drive our cars."

Company owner Joe Van Groll and his partners will build a production plant in Clark County expected to create 28 new jobs.

Re-Powering Aging Coal Plants... Without Coal

Wisconsin was recognized in 2008 by the U.S. Department of Energy which awarded the state a contract to explore the conversion to biomass of small, aging coal plants in the state. Governor Doyle led the effort by ordering the state's largest coal plant—the Charter Street Heating Plant in Madison—to stop burning coal, a \$250,000,000 investment and commitment to Wisconsin's renewable energy future.

Wisconsin is a national leader in converting existing small coal plants to alternative fuels—efforts are underway at the Bayfront Generating Station in Ashland, the Stoneman Plant in Cassville, and at some UW system campuses where boilers are test-burning biomass.

Turning Waste Into Energy

With the assistance of the Wisconsin Department of Natural Resources, wastewater treatment plants that serve cheese plants are now being transformed into power plants—for renewable energy. In Beaver Dam, WI the Kraft Philadelphia Cheese Plant will save \$500,000 per year in avoiding the land spreading of its wastewater. Instead, the plant will install a pre-treatment digester at the municipal treatment plant that will produce methane to fuel a generator. The system will provide all the electricity the city needs for the treatment plant saving it \$300,000 per year.



All over Wisconsin, local governments, businesses and farms are finding new ways to produce energy from what once was considered a waste. Transforming waste to energy is not only saving businesses money, but creating jobs and strengthening our ability to create more of our own energy.

Photo courtesy of the Wisconsin Milk Marketing Board.

Weatherization That Works



The Home Energy Plus Weatherization Assistance Program (WAP) serves a crucial role in the energy future for Wisconsin by helping low-income households reap the economic and environmental benefits of weatherization services. In contract year 2007, the WAP helped reduce home energy costs for 9,223 households by reducing home energy consumption by an average of 211 therms of gas (20.2 percent) and 1,151 kilowatt hours of electricity (13 percent) per year for one-to-four unit buildings. At current energy costs, households participating in the program can save \$354 each year on average. As a result of participation in the program, customer's homes are more comfortable – warmer in the winter and cooler in the summer.

The American Recovery and Reinvestment Act (ARRA) funding represents a significant increase in available weatherization funding to Wisconsin of \$141 million over a three year period. With the increase in ARRA funds, it is estimated that an additional 15,000 units (approximately 5,000 per year) will be weatherized, serving a record number of Wisconsin's most vulnerable citizens. As a result of the increased funding an estimated 300-500 jobs will be created to install weatherization measures in more homes.



U.S. DEPARTMENT OF ENERGY SECRETARY DR. STEVEN CHU
WITH GOVERNOR DOYLE AND A HOMEOWNER WHO RECEIVED
HOME ENERGY PLUS WEATHERIZATION.